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A Well-Rounded Education for a Flat World

Richard H. Hersh



It's not a question of content versus skills—it's about creating challenging, profoundly engaging, and authentic educational experiences that produce lifelong learners.

A decade into the 21st century, educators and policymakers are still debating how to adapt K–12 education for a transformed global arena. Not that this question is unfamiliar. Fifty years ago, the launch of Sputnik ignited a fierce national debate about the inadequacy of U.S. education. The response was a national push for more math and science, a spate of "new" curriculums, and calls for inquiry-based pedagogy that would teach students how to think rather than to simply regurgitate. Two decades later, the National Commission on Excellence in Education's publication of *A Nation at Risk* rekindled the debate—this time, in the context of concerns about the perceived prowess of Japanese schools and corporations. In response, U.S. schools renewed their focus on increased core course requirements, homework, and achievement standards.

The debate about quality continues, spurred now by dissatisfaction with the effects of No Child Left Behind, increasing globalization of education and economics, and an array of international tests on which U.S. students fare poorly when compared with their international peers. Too often, the rhetoric turns simplistic—as in recent heated arguments about whether we should be teaching for content mastery *or* for "21st century skills" like creativity, teamwork, and problem solving. This issue of either content or skills is a false dichotomy, one that we need to transcend if we are going to make significant progress.

We live in a flat world, to cite the widely used metaphor Thomas Friedman (2007) created to explain the global economic, educational, and technological forces that are equalizing opportunity worldwide by empowering people to "compete, connect, and collaborate" (p. x). To thrive in this new world, students will need all the intellectual muscle and deep thinking we have traditionally associated with the best of higher education. These competencies can no longer be reserved for college (not that they're always in evidence there). At every grade level, K–12 as well as higher education, our students need a well-rounded education for a flat world. Actually, the content and skills needed for a well-rounded education are not really new, but in these times they have become far more necessary and urgent.

Content Matters

Information technology has for many years been touted as an education panacea, but it is wrongheaded to believe that instant access to vast knowledge through the Internet and other media means we now need to know and comprehend very little. Content remains essential; an "educated" person needs to know what he or she is talking about both to make sense of an increasingly knowledge-driven world and to gain more knowledge.

Indeed, students should learn U.S. and world history, biology, chemistry, literature, economics, and mathematics if they are to understand and contribute to important political, economic, and moral discussions as citizens. And in a world that cries out for far more humane connections with others, how can we neglect the arts and languages? In a world in which there are serious competing claims of "truth"—science and religion competing in the evolution debate; economic, biotechnological, and equity issues becoming inherent in alternative health care programs; and consequential debates taking place

about energy and emerging global warming policy—ignorance is not bliss.

With so much information already accumulated and new knowledge being produced—far more knowledge than anyone can or should master—the usual vexing questions remain: *What* content should we teach and *how much* is enough? Is basic biology adequate to the task, for example, in a world in which biology, chemistry, and physics are inextricably linked in nanotechnology medical applications?

Skills Are Also Essential

Content is necessary but not sufficient. Because teaching time is finite and content virtually infinite, skills that allow one to continue learning and to make judgments about the meaning, adequacy, and accuracy of content are more important than ever. Simply accumulating information without learning to apply it results in what Alfred North Whitehead (1929) referred to as *inert ideas* that remain stale or dead unless put to good use. We must also teach students to apply knowledge, to think horizontally crossing disciplines and connecting the dots to make sense of the seemingly infinite information available through information technology and media.

The kind of learning we need stimulates the imagination and teaches how to construct meaning and make disparate information coherent. It involves the ability to think critically and solve problems and to judge what is relevant, what is accurate, and what is right. Moreover, it requires what some disparagingly have called *soft skills*—skills like valuing and embracing diverse ideas and people, working cooperatively with others, tolerating ambiguity, and possessing the resilience to bounce back after setbacks.

Teaching for such outcomes involves far more than asking students to passively receive information. Consider for example, problem-based or case-study teaching in which students are asked to apply historical, scientific, and cultural knowledge to address real problems. This approach could be used to study the many world problems related to water—such as the rapidly diminishing water supplies confronting farmers and residents in Arizona and California or the lack of potable water in large areas of Africa and India. Asking students individually and in groups to tackle such issues, evaluate the nature of the problems, consider the possible alternatives, and defend recommendations and conclusions based on data helps them develop skills in critical thinking, imagination, moral consideration, identification of appropriate knowledge, and cooperation with others in finding and justifying solutions.

Rethinking Engagement

A well-rounded education for a flat world is not the result of a simple accumulation of courses and credit hours but rather the cumulative effect of clear, rigorous, and collective teacher and administrator commitment. It is the result of a pervasive school culture that refuses to define education as the passive reception of knowledge and instead celebrates demanding, profoundly engaging, and authentic educational experiences.

By *engagement*, I do not mean simply keeping students busy and interested, but rather expecting them to construct and validate meaning—to make sense of things. Education needs to involve students in a process of purposeful reflection—researching, writing, speaking, and being simultaneously intellectually *and* emotionally connected with what they are doing.

Writing and speaking are valuable because they require making thought and feeling public; unless we are required to articulate to others what we think, feel, and believe—and receive timely and appropriate feedback from teachers and peers—most of us convince ourselves that we understand something even when we do not.

Asking students investigating the water example above to share with their group, orally or in writing, their

analyses and recommendations is just one example of such engagement. Sharing first, second, and even third drafts of papers with peers and one's teacher on various assignments in any content area makes learning public and provides opportunity for peer teaching, a strategy strongly supported by learning research. More than that, critiquing one another's work helps students learn to provide civil and constructive feedback, receive criticism, internalize standards and criteria for excellence, and reflect on their own work in progress.

Rethinking Assessment

Because feedback during learning is crucial, we must rethink the importance and role of assessment. Final and midterm tests are not enough; nor are standardized tests helpful as learning tools. Assessment must be timely and appropriate to inform students and teachers during, not after, learning—in time and in ways that allow for correction and celebration. We need to understand assessment as a powerful form of teaching and learning that signals to students what knowledge and skills they need to master and what standards they need to achieve. Ultimately, we want students not to please us or to simply get good grades, but rather to please themselves by achieving worthwhile goals and reaching standards of excellence, thus becoming long-term learners.

Increased Urgency

What we are reaping from the K–12 system today is not good enough. The dropout rate, especially in urban areas, is tragic. And even a high school diploma hardly signals that one is "educated." Students coming to college are far more intellectually and emotionally fragile than ever before, far less able to make sense of things (Secretary of Education's Commission on the Future of Higher Education, 2006).

I hasten to add that schools are hardly the sole cause of the problems. The larger cultural forces with which children and adolescents must cope—coarsening television and Internet content; family economic distress; absent parents; the paradox of the electronic umbilical computer and cell phone "connections," with their insidious psychological and emotional disconnecting effects; and the dumbing down of K–12 education through a focus on reductionist standardized tests—are cumulatively having adverse and perverse effects on students before and during college.

The good news is that we know far more about effective education than we are using. Education and brain-based research point to the power of the same elements of education quality for which many reformers are calling: high expectations and standards, sufficient time devoted to learning, timely and appropriate feedback, talented teachers, and engagement of students. These key variables are not new. What we have increasingly come to understand, however, is that none of these is particularly powerful in isolation. Each school, indeed each classroom, has its own ecology in which systemic and systematic change must take place, so each teacher and school must purposefully combine all of these factors to create a synergistic and cumulative effect. We have to do many things at once to achieve significant learning.

We cannot purchase a well-rounded education for a flat world with new technology, a new standardized test, or an SAT prep course. We cannot achieve it by abandoning the rigorous teaching of reading, writing, science, math, history, and literature. Indeed, we need to teach these subjects far more effectively, along with the 21st century skills mentioned above, in ways that respect what we know about learning.

And we need to move in this direction at flat-out speed.

References

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Richard H. Hersh is Senior Consultant at Keeling and Associates, a higher education consulting firm in New York, New York. He is former president of Hobart and William Smith Colleges, in Geneva, New York, and of Trinity College, in Hartford, Connecticut; rhersh@keelingassociates.com.

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